

A new species of *Eopompilus* Gussakovskij (Hymenoptera: Pompilidae) from China, with an updated key to the species

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Abstract: A new species of *Eopompilus* (Pompilidae: Pepsinae), *E. unguivarius* Ji & Ma sp. nov., is described and illustrated based on specimens collected on Liupanshan Mountain in Ningxia, China. A key to the species of this genus worldwide is provided.

Key words: Pepsinae; Pepsini; taxonomy; spider wasps

中国新沟蛛蜂属一新种记述及世界种类检索表（膜翅目：蛛蜂科）

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摘要: 记述采自中国宁夏六盘山的蛛蜂科 Pompilidae、沟蛛蜂亚科 Pepsinae、新沟蛛蜂属 *Eopompilus* 1 新种, 异爪新沟蛛蜂 *E. unguivarius* Ji & Ma sp. nov., 编制了该属世界种类检索表。

关键词: 沟蛛蜂亚科; 沟蛛蜂族; 分类; 蛛蜂

Introduction

The genus *Eopompilus* (Pompilidae: Pepsinae: Pepsini) was described in 1933 by Gussakovskij to include two species: *E. orientalis* Gussakovskij and *E. minor* Gussakovskij. Later, Haupt (1935) erroneously transferred the genus to Pompilinae, and described the third species of the genus, *E. hummeli* Haupt. In 1962, Ishikawa revised this genus, transferred it to Pepsinae, treated *E. orientalis* as a junior synonym of *E. internalis* (Matsumura), and transferred *E. hummeli* Haupt to *Anoplius*. Ishikawa (1965) then described a subspecies, *E. minor itoi* Ishikawa from Taiwan. More recently, Lelej (1986) described *E. luteus* Lelej and provided a key to the species of this genus worldwide. To date, three species and one subspecies of *Eopompilus* have been described.

E. internalis (Matsumura, 1911) and *E. minor* Gussakovskij (1933) occur in Ussuri, Far Eastern Russia, and Japan, and are fairly common in Japan as far south as the Island

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Yakushima. *E. minor itoi* Ishikawa (1965) occurs in Nantou Hsien in Taiwan, China. *E. luteus* Lelej (1986) occurs in Far Eastern Russia (Gussakovskij 1933; Haupt 1935; Ishikawa 1962, 1965; Lelej 1986, 1995; Loktionov & Lelej 2012; Shimizu 1996).

During our study of Chinese Pepsinae (Ma & Li 2011), one new species of the genus *Eopompilus* was discovered. This new species is described and illustrated and Lelej's key to the species of this genus is updated to include the new species.

Material and methods

The material is deposited in Yunnan Agricultural University, Kunming (YNAU). The specimens were observed and illustrated by the aid of a stereomicroscope (SZ Series) and measured with an ocular micrometer. Abbreviations are as follows: A1, A2... — Antennal segment 1, 2...; HL — head length; HW — head width; OCD — ocello-occipital distance; Od — anterior ocellar diameter; OOD — ocellocular distance; and POD — postocellar distance.

Taxonomy

Eopompilus Gussakovskij, 1933.

Sialus Matsumura, 1911: 136.

Eopompilus Gussakovskij, 1933: 34. Type species: *Eopompilus orientalis* Gussakovskij, 1932 = *Sialus internalis* Matsumura, 1911.

Diagnosis. Propodeum impunctate; inner side of hind tibia with a sharp longitudinal groove along upper margin of brush; female sternum 2 with a fine transverse groove, almost inconspicuous; female claw long and narrow, with a small tooth along internal margin; male claw with a basal blunt tooth, generally not obvious, fore claw sometimes modified and mid claw sometimes with distinct basal tooth; female antennae thin and long, gradually tapering from segments III; male with antennal segments 4–13 produced on lower side and concave on upper side, giving a crenulated profile to antenna; apical margin of sternum 6 emarginate or straight, densely fringed with a row of horizontal fine spines of equal length in male (Gussakovskij 1933; Ishikawa 1962; Shimizu 1996).

Key to the species of *Eopompilus* of the world

1. Antenna with 12 segments; metasoma with 6 visible segments..... female, 2
- . Antenna with 13 segments (Fig. 4); metasoma with 7 visible segments..... male, 5
2. Gastral terga 1–5 with transverse yellow spots (sometimes confluent); legs with abundant yellow pattern; wing slightly yellowish..... *E. luteus* Lelej
- . Gastral terga black or 2nd and 3rd with transverse yellow or ivory-white stripes (sometimes confluent); legs black or light brown or black mixed with brown; wing hyaline or somewhat fulvous..... 3
3. Fore wing somewhat fulvous, apical one-third of fore wing dark fuscous, somewhat paler towards the apical margin; body 15.5–21 mm long..... *E. internalis* (Matsumura)
- . Fore wing with subapical dark marking, apex whitish; body 7–10 mm long..... 4
4. Erect setae dark on apical portion of metasoma; crossvein 3rs-m of fore wing strongly curved; front with a narrow, often interrupted, ivory-white line along the inner orbits..... *E. minor* Gussakovskij
- . Erect setae whitish to very pale fulvous on apical portion of metasoma; crossvein 3rs-m of fore wing not angularly but feebly arched; frons with a yellow streak on each side along inner orbit.....

- *E. minor itoi* Ishikawa
5. Body and legs with abundant yellow pattern; wing hyaline with yellowish..... *E. luteus* Lelej
- . Body black with white, or pale yellow, or yellow pattern on the head, legs black mixed with reddish brown, or light brown with yellow marking, or black mixed with brown; wing hyaline or somewhat fulvous..... 6
6. Propodeum with dense punctures; the sides of metanotum with strong striae; fore claws modified, strongly curved and with distinct long, acute, basal tooth (Fig. 7)..... *E. unguivarius* sp. nov.
- . Propodeum impunctate; the sides of metanotum inconspicuously, feebly striate or with very fine, weak striae; fore claws normal, with an indistinct blunt basal tooth..... 7
7. A narrow streak along the outer orbits, clypeus, mandibles except apex, 1st antennal segment below yellow; fore wing with subapical cloud, apex somewhat whitish; body 6.2–7.6 mm long.....
- *E. minor minor* Gussakovskij
- . A narrow line along the outer orbits, clypeus, mandibles except apex, 1st antennal segment below ivory-white; apex of fore wing less fuscous; body 10–16.5 mm long..... *E. internalis* (Matsumura)

Note: female of *E. unguivarius* sp. nov. is unknown and male of *E. minor itoi* Ishikawa is unknown.

***Eopompilus unguivarius* Ji & Ma sp. nov.** (Figs. 1–15)

Diagnosis. This species clearly differs from the other species by the following characters. The metanotum and propodeum have dense punctures, and the metanotum has strong striae laterally; the fore claws are modified being strongly curved and with distinct long acute basal tooth (Fig. 7); and the genitalia has four squamal processes medially (Fig. 11).

Description. Male. Body length 5.5–6.5 mm. Fore wing 4.5–6.0 mm.

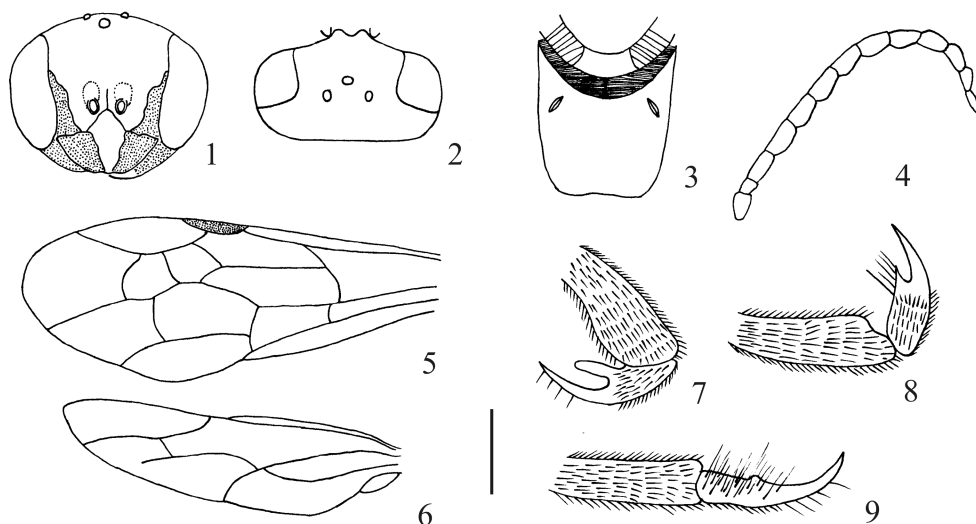
Color. Black, yellow on basal half of mandible, spots on lateral clypeus, streak along the inner and outer orbits, spots on each side of anterior portion of pronotum, spot on apical part of fore coxa, and pair of spots on gastral tergum 3. Reddish brown on apical area of mandible, fore femora except base and outer ventral areas, fore tibia, fore basitarsus, mid femora apically, mid tibia except outer margin, and hind tibia except outer margin. Wing hyaline with brown veins.

Seta. Mandible with long, sparse, yellow setae and short, dense, yellow setae; head and antenna with short, dense, yellow setae; gena with long, sparse, yellow setae; mesosoma with whitish setae; setae on metasoma and legs yellow.

Head. Clypeus slightly elevated, apical margin slightly bisinuate (Fig. 1), densely punctuate; mandible bidentate apically; frons immediately posterior to antennal sockets raised and concave (Fig. 2); frons with short median line between antennal sockets (Fig. 1), lower area of frons with dense punctures; vertex with dense punctures; gena without punctures; ocelli in an obtuse triangle, anterior ocellus larger than posterior ocellus (Fig. 2); inner orbits weakly but distinctly emarginate (Fig. 1); antennal segments from 4th produced on lower side and concave on upper side, giving antenna a crenulate profile (Fig. 4), A3 seven-thirds of the apical width; $POD : OOD : Od : OCD = 8 : 8 : 2.5-3 : 8-9$; $HW : HL = 8.5-9 : 8$; in dorsal view, relative length of A1, A2, A3, A4, A5, A8, A12, A13 = 18–20, 10, 21–22, 22–24, 21–22, 20–21, 15–18, 15–18.

Mesosoma. Seen from above, length of pronotum and mesoscutum in middle = 15–23 : 50; pronotum shorter than mesoscutum, with dense punctures, posterior margin angulate medially; mesonotum with dense punctures, with parapsidal sutures nearly complete, reaching close to pronotum; metanotum as long as postnotum (Fig. 3); mesopleuron with dense punctures; length of scutellum, metanotum, postnotum and propodeum in middle = 24–26,

10–12, 10, 48–50, scutellum elevated, with dense punctures; metanotum with dense punctures medially, strong striae laterally (Fig. 3); postnotum with transverse striae, median impression, anterior and posterior postnotum nearly parallel (Fig. 3); propodeum with dense punctures; length of femur-tibia of fore, mid and hind legs = 48~50–40, 55~55–56, 80~82–85. Hind wing crossvein cu-a originating basad to point of separation of vein M+CuA (Fig. 6). Fore claws modified, strongly curved, with distinct long acute basal tooth (Fig. 7), mid claws with distinct basal tooth, hind claws with indistinct blunt basal tooth (Figs. 8, 9).



Figures 1–9. *Eopompilus unguivarius* Ji & Ma sp. nov. 1. Head, frontal view; 2. Head, dorsal view; 3. Metathorax, dorsal view; 4. Antennae, lateral view; 5. Fore wing; 6. Hind wing; 7. Fore claw, outer side view; 8. Mid claw, outer side view; 9. Hind claw, inner side view. Scale bars = 1.40 mm (Figs. 1–3); 1.00 mm (Figs. 4–6); 6.22 mm (Figs. 7–9).

Metasoma. Subfusiform, without petiole; sternum 2 smooth, without transverse groove, with inconspicuous line; sternum 6 concave subapically, with projections laterally, apical margin straight medially, densely fringed with a row of horizontal, fine spines of equal length (Fig. 10); apex of metasomal sternum 8 (Fig. 15) with inverted V-shaped projection dorsally, setae peripherally (Fig. 15); genitalia (Figs. 11–14): in ventral view, paramere of genitalia with long setae apically and medially, basal area with setae, upturned (Figs. 11–13), with four squamal processes medially (Fig. 11).

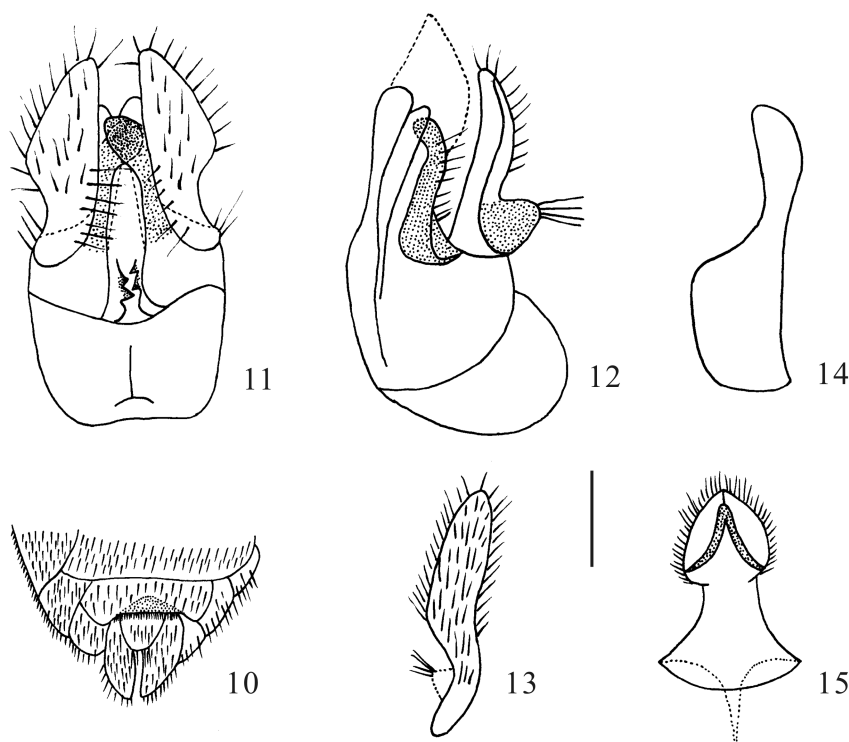
Female. Unknown.

Etymology. The specific epithet is derived from Latin, *unguis*- (claw) and *varius* (variable), with reference to the modified fore claws of this species.

Holotype. ♂, **China**, Ningxia, Guyuan City, Liupanshan Mountain; Erlonghe Forestry Centre, 35°21.77'N 106°18.8'E, 1985 m, 10-VII-2009, leg. Zhenhua ZU; **Paratypes.** 3♂, Ningxia: Liupanshan Mountain; Xixia Forestry Centre, 35°29.58'N 106°17'E, 2073 m, 05-VII-2009, leg. Miao LI; 1♂, Ningxia: Guyuan City, Liupanshan Mountain; Shanfengtai

Forestry Centre, 35°39.26'N 108°11.78'E, 2465 m, 04-VII-2009, leg. Miao LI. The type specimens are deposited at Yunnan Agricultural University, Kunming, China.

Distribution. China (Ningxia).



Figures 10–15. *Eopompilus unguivarius* Ji & Ma sp. nov. 10. Sternum 6, ventral view; 11. Genitalia ventral view; 12. Genitalia, lateral view; 13. Paramere of genitalia, dorsal view; 14. Parapenial lobe, dorsal view; 15. Metasomal sternum 8, dorsal view. Scale bars = 2.80 mm (Figs. 10); 6.22 mm (Figs. 11–15).

Discussion

Concerning generic characters, the new species *Eopompilus unguivarius* does not match the genus by the following characters: fore tarsal claws modified, strongly curved and with distinct long acute basal tooth. In Pepsinae, there is the similar situation in *Minagenia* Banks, fore tarsal claws normal or modified; for example, the fore tarsal claws of *Minagenia alticola* Tsuneki (male) are normal and fore tarsal claws of *Minagenia taiwana* Tsuneki (male) are modified. We realize that the normal or modified fore tarsal claws in male is not of generic value, and propose to modify the generic character to “tarsal claws with an indistinct blunt basal tooth, sometimes fore tarsal claws strongly curved and with distinct long acute basal tooth”.

Concerning similar species, this new species *Eopompilus unguivarius* is morphologically similar to *E. internalis* (Matsumura, 1911). They differ by in the latter species, the metanotum and propodeum are impunctate and the metanotum has indistinctly feebly striae laterally; fore claws are normal with a blunt basal tooth; and the genitalia has two squamal processes

medially. In *E. unguivarius*, the metanotum and propodeum have dense punctures, and the metanotum has strong striae laterally; the fore claws are modified, being strongly curved and with a distinct long acute basal tooth; and the genitalia has four squamal processes medially.

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